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## *Contents*



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# Report Documentation Page

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## Lightning-Associated Injuries among Active Duty Members, US Armed Forces, 1998-2000

Each year in the United States, approximately 300 people are struck by lightning; and of these, approximately 100 die of their injuries (mortality rate approximately 30%). In nonmilitary populations and settings, lightning injuries occur most often in the summer among people who are outdoors during afternoon and early evening hours. Activities commonly associated with lightning injuries include waiting under trees, camping, jogging, participating in water sports, golfing, working around farm or construction equipment, and using telephones. In approximately one-third of lightning injury incidents, there are two or more victims[1].

Episodes of multiple casualties from single lightning strikes provide insights into the nature and scope of the risk in military settings. On 17 July 2001, 31 soldiers were injured by a single lightning strike. The injured soldiers were members of a dental reserve unit from Tennessee and a signal battalion from Fort Gordon, Georgia. Injuries included abnormal cardiac rhythms, tingling and numbness of arms and legs, and possible tissue damage. A television that was plugged into a generator was considered a contributing factor. On 31 May 2001, four soldiers were injured, one critically, when they were struck by lightning at Fort Carson, Colorado. The strike occurred at mid-afternoon among soldiers who were caught in a hailstorm while training.

Military members work, train, conduct operations, and recreate outdoors—year round and in all weather conditions. In turn, they often confront thunderstorms and lightning. This report documents frequencies, rates, trends, and correlates of risk of lightning-related injuries of US servicemembers during a 3-year surveillance period.

*Methods.* The Defense Medical Surveillance System (DMSS) was searched to identify all hospitalizations or ambulatory visits of active duty servicemembers from January 1998 through December 2000 with primary diagnoses of "effects of lightning, shock from lightning, or struck by lightning" (ICD-9-CM code 994.0).

*Results.* Three hundred-eighty servicemembers were injured (2 fatally) by 126 lightning strikes between January 1, 1998 and December 31, 2000. The overall lightning strike injury rate was 9.25 per 100,000 person-years.

Lightning injury rates were significantly higher in the Army than the other services (figure 1). Rates of lightning injuries were generally stable throughout the period; however, the rate was sharply higher in the Army in 2000 (figure 1), primarily due to a single strike that injured 45 men at Fort Benning, Georgia.

Fifty (40% of the total) lightning strikes that injured servicemembers involved two or more victims. The median number of victims per incident was three. More than half of all lightning injuries occurred in the summer (June, July, or August), and approximately one-third occurred in July (figure 2).

Rates were highest among servicemembers in occupations designated as combat (9.87 per 100,000 person-years) and combat support (10.9 per 100,000 person-years). Rates in combat and combat support occupations were approximately 3 times higher than those in healthcare-related occupations (3.49 per 100,000 person-years).

***Editorial comment.*** It is estimated that approximately 100,000 thunderstorms and 30 million cloud-to-ground lightning strikes occur each year in the United States[2]. The highest lightning strike frequencies occur in Florida and along the Gulf coast[3]. The dangers of lightning are not always apparent to ground observers; for example, lightning has struck as far away as 10 miles from the rain of a thunderstorm[3].

A recent study based on death certificates revealed an average of 83 lightning-related deaths each year in the U.S. from 1980 to 1995. The highest numbers of deaths were in Florida and Texas, while the highest rates were in New Mexico, Arizona, Arkansas, and Mississippi[4]. An earlier study primarily based on newspaper clippings estimated that between 1959 and 1990, there were averages of 93 deaths and 257 injuries per year related to lightning[1]. Another death certificate-based study found that between 1968 and 1985, there was an average of 107 lightning-related deaths per year in the U.S.[1] The findings of these studies support the general observation that lightning-related deaths have declined in the U.S. since the 1950s[1,4]. Undoubtedly, many factors have contributed to the decline including reduced numbers of residents and outdoor workers in rural areas, improved storm detection and warning systems, expanded risk awareness and safety education programs, and improved emergency response, resuscitation, and treatment capabilities[2].

Among US servicemembers, there were an average of 127 lightning-related injuries each year from 1998 to 2000;

**Figure 1. Rates of injuries from lightning strikes by service, active duty members, US Armed Forces, 1998-2000.**

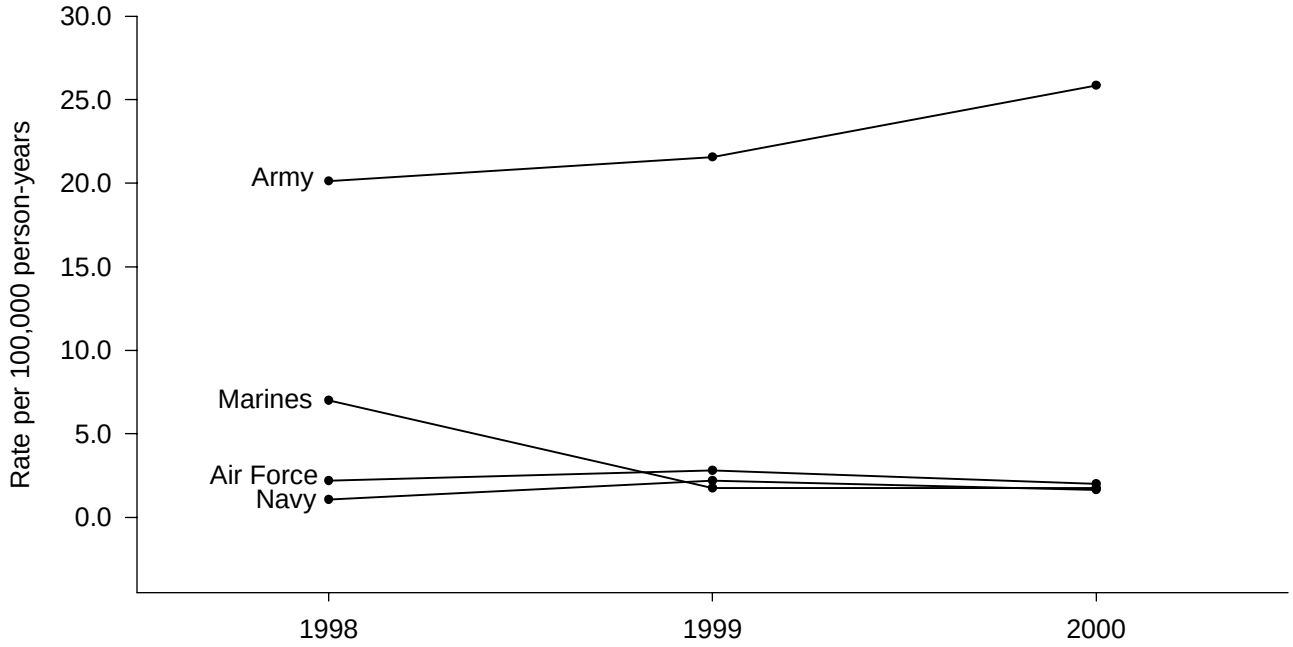
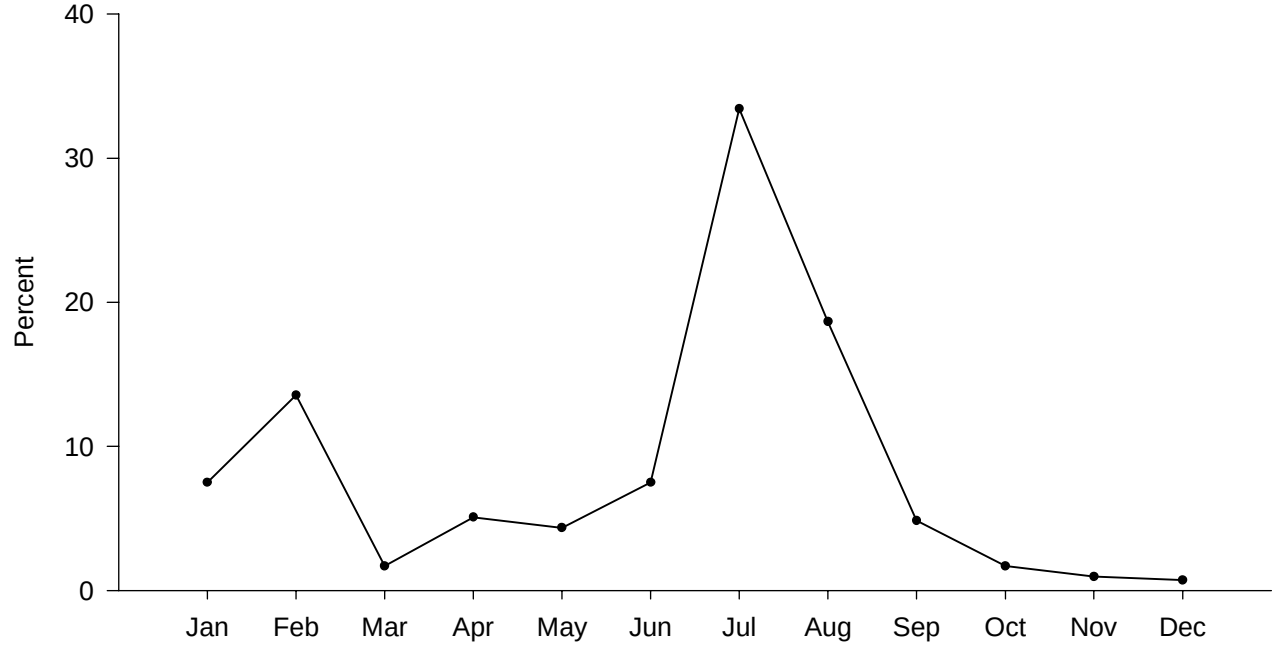



**Figure 2. Distribution of lightning strikes by months of occurrence, active duty members, US Armed Forces, 1998-2000.**



and in 40% of injury episodes, there were multiple victims. The rates were consistently higher in the Army than the other services. The findings are not surprising since lightning hazards are inherent to many aspects of military service.

Most nonmilitary victims of fatal lightning strikes are engaged in outdoor recreational (52%) or work (25%) activities at the times of their injuries[1]. In the military in general (and the Army in particular), much of the training and many operations are necessarily conducted outdoors; training and tactical circumstances (e.g., terrain features, range facilities, bivouac sites, tactical formations) often require close groupings of servicemembers and continuous operations regardless of weather conditions; units engaged in training or actual operations may not receive warnings that are broadcast over nonmilitary networks (e.g., commercial television and radio stations); and some military equipment is inherently dangerous in thunderstorms (e.g., antennas, towers, wires, vehicles, machines).

Lightning is unavoidable in many military situations, but lightning-related risks can be managed[5]. The attached guidelines may be useful to commanders, training staffs, and supervisors at all levels to reduce risks associated with lightning.

*Analysis and report by R. Allen Frommelt, MS, Analysis Group, Army Medical Surveillance Activity.*

*References*

1. Lopez RE, Holle RL. Demographics of lightning casualties. *Semin Neurol* 1995;15:286-95.
2. Krider EP, Uman MA. Cloud-to-ground lightning: mechanisms of damage and methods of protection. *Semin Neuro*l 1995:15:227-32.
3. Holle RL, Lopez RE, Howard KW, Vavrek J, Allsopp J. Safety in the presence of lightning. *Semin Neurol* 1995;15:375-80.
4. Duellos PJ, Sanderson LM. An epidemiological description of lightning-related deaths in the United States. *Int J Epidemiology* 1990; 19:673-9.
5. Centers for Disease Control and Prevention. Lightning-associated deaths—United States, 1980-1995. *MMWR Morb Mortal Wkly Rep* 1998 May 22;47(19):391-4.

## Lightning Protection*

- **Cease all outside training.**
- **Move personnel into a building if possible.**
- **If no building is available, move personnel into dense woods; a low area, ditch or ravine; or the foot of a hill or cliff.**
- **Keep personnel from fences, electrical wiring, vehicles or other possible conductors of electricity.**
- **When marching in formation, increase the minimum distance and interval to twice that normally maintained.**
- **Do not use radios or carry radios with antennas extended.**
- **Move away from areas containing TV antennas, relay antennas, or vehicles with whip antennas.**
- **Move a safe distance away from metal machinery, approximately 100 feet.**
- **Do not group together under a tree; do not huddle together if caught in an open area.**
- **Avoid hilltops, lone trees, flagpoles fences, overhead wires, tents and small unprotected buildings in the open, and metallic objects such as artillery pieces and open or canvas top vehicles.**
- **When indoors, stay away from telephones, electrical wiring, fireplaces, stoves, showers, bathtubs, sinks, water pipes, and other possible conductors of electricity.**
- **Do not use personal plug-in appliances such as hair dryers, toothbrushes, or razors.**
- **Do not handle flammable liquids in open containers.**

*Recommendations provided by the US Army Safety Center

## Electrical Injuries Among Active Duty Members, US Armed Forces, 1998-2000

In the United States, electrocution is the fifth leading cause of work-related deaths from injuries[1,2,3] and the second leading cause of deaths in the construction industry.[2] Electrocutions account for 6% to 7% of all occupation-related injury deaths.[4,5] Many electrical injuries result from noncompliance with safety procedures and/or from negligence.[4] The following report of a fatal electrical injury illustrates the point:

Before working on a temporarily spliced overhead power line, an electrician and his assistant cut off power from a nearby transformer. Unfortunately, the line was fed from a different source. Believing that the power was off, the workers began the repair. As they neared completion of the job, the electrician removed his insulated gloves, grasped the two ends of an energized 4,160-volt line, and was electrocuted. The assistant summoned emergency personnel, but the electrician could not be resuscitated.[6]

Military members often work with electrical equipment or in the vicinity of electrically charged materials. Thus, most servicemembers are periodically at risk of electrical injury; in addition, some servicemembers have significant occupation-specific risks. This report documents frequencies, rates, trends, and correlates of risk of electricity-related injuries of U.S. military servicemembers during a 3-year period.

*Methods*. The Defense Medical Surveillance System was searched to identify all outpatient visits and hospitalizations of active duty servicemembers with a primary diagnosis of electrocution (ICD-9-CM code 994.8) during the period 1998 through 2000. Military occupations were grouped by DoD Primary Occupation Codes.

*Results*. During the three-year surveillance period, 885 active duty servicemembers were treated at military medical facilities for electrical injuries (hospitalizations: n=60, 6.8%; ambulatory visits: n=825, 93.2%). The overall rate (mean annual rate: 21.6 per 100,000 person-years [p-yrs]) was relatively stable throughout the period (table 1).

Electrical injury rates were approximately 65% higher among males than females. While rates slightly declined from year to year among males, they increased sharply among females in year 2000 (figure 1).

Among males (but not females), electrical injury rates were significantly higher among white nonhispanic servicemembers compared to black and other racial/ethnic subgroup members (table 1).

Electrical injury rates were approximately 2 to 6-times higher in the Navy compared to the other services, more than 9-times higher among enlisted members compared to officers (figure 2), and declined significantly with age. The rate among the youngest (17 to 24 years) servicemembers was more than 5-times higher than among the oldest (table 1).

Crude rates of electrical injuries were more than twice as high in servicemembers with "support" compared to "combat" and "medical" military occupations. Approximately 83% of all electrical injuries occurred among servicemembers with "support" occupations (table 1). Of servicemembers with support occupations, the highest rates were among electronics repairers, electrical repairers, and craftworkers (which includes electricians) (figure 3).

***Editorial comment.*** This report reveals that, in US military forces between 1998 and 2000, there were more than 2 times as many injuries from electrocutions (almost one electrical injury per day) as lightning strikes (see related article on page 2). The highest rates of electrical injuries among US servicemembers were in young (junior grade), enlisted, white male sailors with military occupations related to electrical/electronic equipment and utilities.

Work that involves electricity is inherently hazardous; still, electrical injuries are largely preventable. Investigators from the Armed Forces Institute of Pathology found that between 1955 and 1988, the factors most often associated with electrocutions of servicemembers were blatant carelessness, misuse or improper maintenance of equipment, and intoxication.[7] The National Institute of Occupational Safety and Health (NIOSH) identified five occupational settings that were most frequently associated with fatal electrical injuries: direct worker contact with an energized power line (28%); direct worker contact with energized equipment (21%); boomed vehicle contact with an energized power line (18%); improperly installed or damaged equipment (17%); and conductive equipment contact with an energized power line (16%).[4,8]

Among US workers between 1980 and 1992, the highest numbers of electrocutions were in the construction (40%) and transportation/communication/public utilities (16%) industries. White male construction workers in their early 30's were at particularly high risk[2,4]; and approximately

90% of all electrical injuries of construction workers were associated with overhead power lines[2].

Electrical shock can cause acute and delayed tissue damage. Cardiac arrhythmias and respiratory arrest are the most life-threatening complications in the acute phase.[9] While electrical injuries can affect all organ systems[8], there is significant variability in tissue resistances. Nerves, blood vessels, and muscle are particularly susceptible to electrical injury.[9]

Alternating current (AC), which is used in standard households, is generally more dangerous than direct current (DC). AC causes tetanic contractions in skeletal muscle which can fix victims to sources of current and prolong exposure times. With ACs of 25-300 Hz, low voltages (< 220V) tend to produce ventricular fibrillation while high voltages tend to cause respiratory failure.[8,10,11] Compared with AC of similar voltage, DC is more likely to cause tissue damage and burns. Experimental studies have shown that 25 milliamps of direct current can produce permanent damage to nerves and blood vessels.[8,10]

When an electrocution occurs, bystanders and first responders should protect themselves before helping victims. After electrical hazards have been removed or neutralized, constricting items should be removed from victims, and resuscitation efforts (prolonged if necessary) should begin.[9,11]

In summary, in the military services, efforts to prevent electrical injuries should focus on young (and other inexperienced) enlisted servicemembers who have occupational exposures to electrical equipment and utilities.

*Analysis and report by Garret R. Lum, MPH, Analysis Group, Army Medical Surveillance Actvity.*

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2. Electrocutions in the construction industry involving portable metal ladders—United States, 1984-1988. *MMWR Morb Mortal Wkly Rep* 1992 Mar 20;41(11):187-9.

**Table 1. Electrical injuries among active duty members, US Armed Forces, 1998-2000.**

| | Male | | | Female | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| | Population | Cases | Rate* | Population | Cases | Rate* | Population | Cases | Rate* |
| **Service** | | | | | | | | | |
| Army | 1,206,147 | 109 | 9.0 | 211,495 | 13 | 6.1 | 1,417,642 | 122 | 8.6 |
| Air Force | 875,232 | 85 | 9.7 | 196,213 | 11 | 5.6 | 1,071,445 | 96 | 9.0 |
| Navy | 958,729 | 506 | 52.8 | 145,748 | 54 | 37.1 | 1,104,477 | 560 | 50.7 |
| Marines | 483,306 | 98 | 20.3 | 29,786 | 9 | 30.2 | 513,092 | 107 | 20.9 |
| **Age group** | | | | | | | | | |
| 17-24 | 1,314,237 | 485 | 36.9 | 255,960 | 64 | 25.0 | 1,570,197 | 549 | 35.0 |
| 25-34 | 1,302,015 | 252 | 19.4 | 207,223 | 20 | 9.7 | 1,509,238 | 272 | 18.0 |
| 35+ | 907,091 | 61 | 6.7 | 120,042 | 3 | 2.5 | 1,027,133 | 64 | 6.2 |
| **Rank** | | | | | | | | | |
| Enlisted | 2,956,518 | 783 | 26.5 | 490,558 | 85 | 17.3 | 3,447,076 | 868 | 25.2 |
| Officer | 566,896 | 15 | 2.6 | 92,684 | 2 | 2.2 | 659,580 | 17 | 2.6 |
| **Race/Ethnicity** | | | | | | | | | |
| Black | 638,778 | 86 | 13.5 | 185,418 | 16 | 8.6 | 824,196 | 102 | 12.4 |
| White | 2,401,354 | 617 | 25.7 | 316,860 | 55 | 17.4 | 2,718,214 | 672 | 24.7 |
| Other | 483,282 | 95 | 19.7 | 80,962 | 16 | 19.8 | 564,244 | 111 | 19.7 |
| **Occupation** | | | | | | | | | |
| Combat | 862,489 | 97 | 11.2 | 49,247 | 16 | 32.5 | 911,736 | 113 | 12.4 |
| Medical | 227,445 | 27 | 11.9 | 116,015 | 9 | 7.8 | 343,460 | 36 | 10.5 |
| Support | 2,433,480 | 674 | 27.7 | 417,980 | 62 | 14.8 | 2,851,460 | 736 | 25.8 |
| **Total** | 3,523,414 | 798 | 22.6 | 583,242 | 87 | 14.9 | 4,106,656 | 885 | 21.6 |

*Events per 100,000 person-years

**Figure 1. Trends of electrical injuries, by gender, active duty members, US Armed Forces, 1998-2000.**

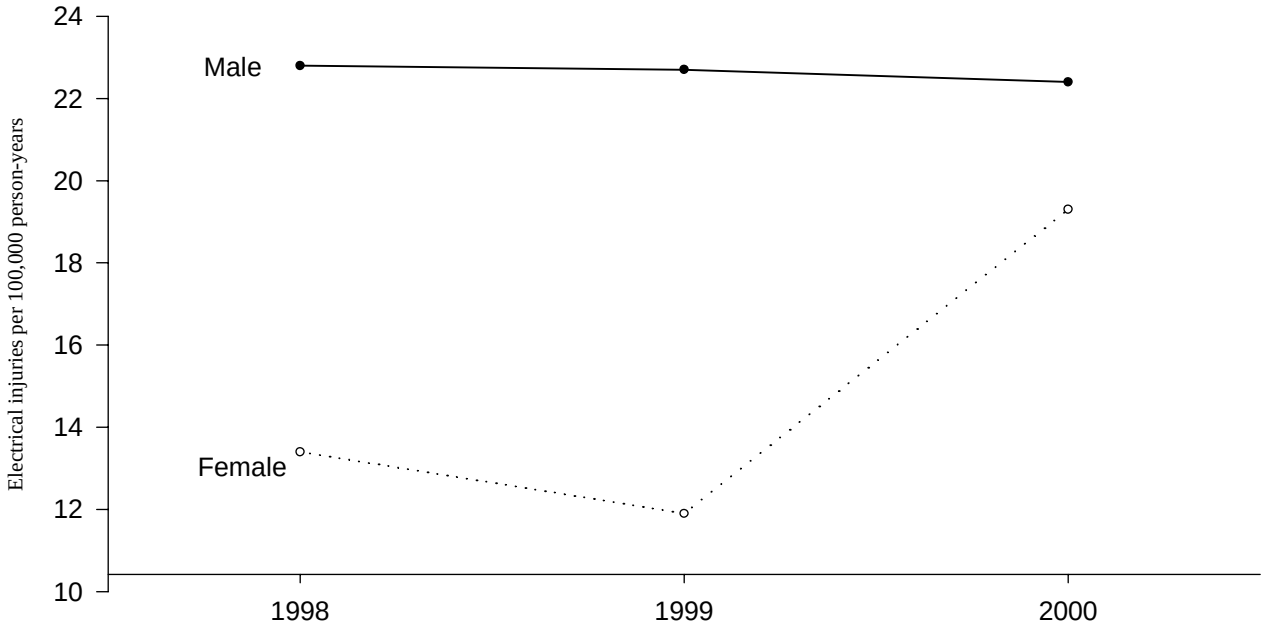
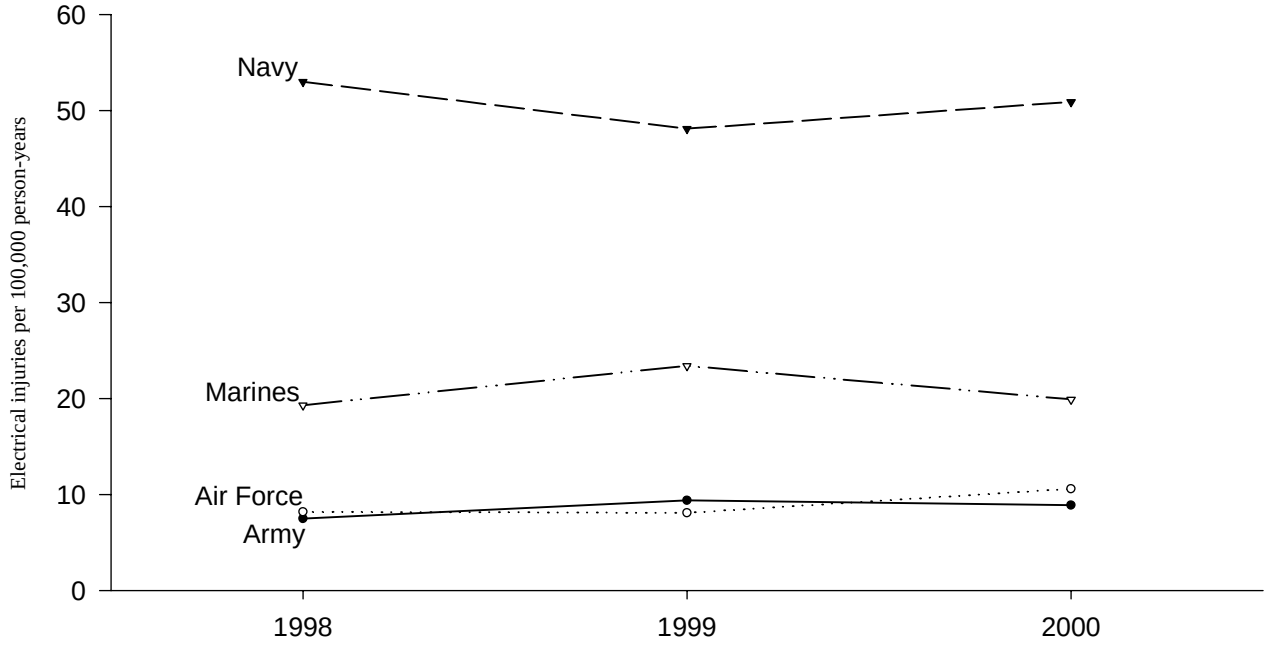



**Figure 2. Trends of electrical injuries, by service, active duty members, US Armed Forces, 1998-2000.**



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8. Irvine J. Electric shock and associated injuries. *Practitioner* 1989 Nov 8;233(1478):1454-7.
9. Browne BJ, Gaasch WR. Electrical injuries and lightning. *Emerg Med Clin North Am* 1992 May;10(2):211-29.
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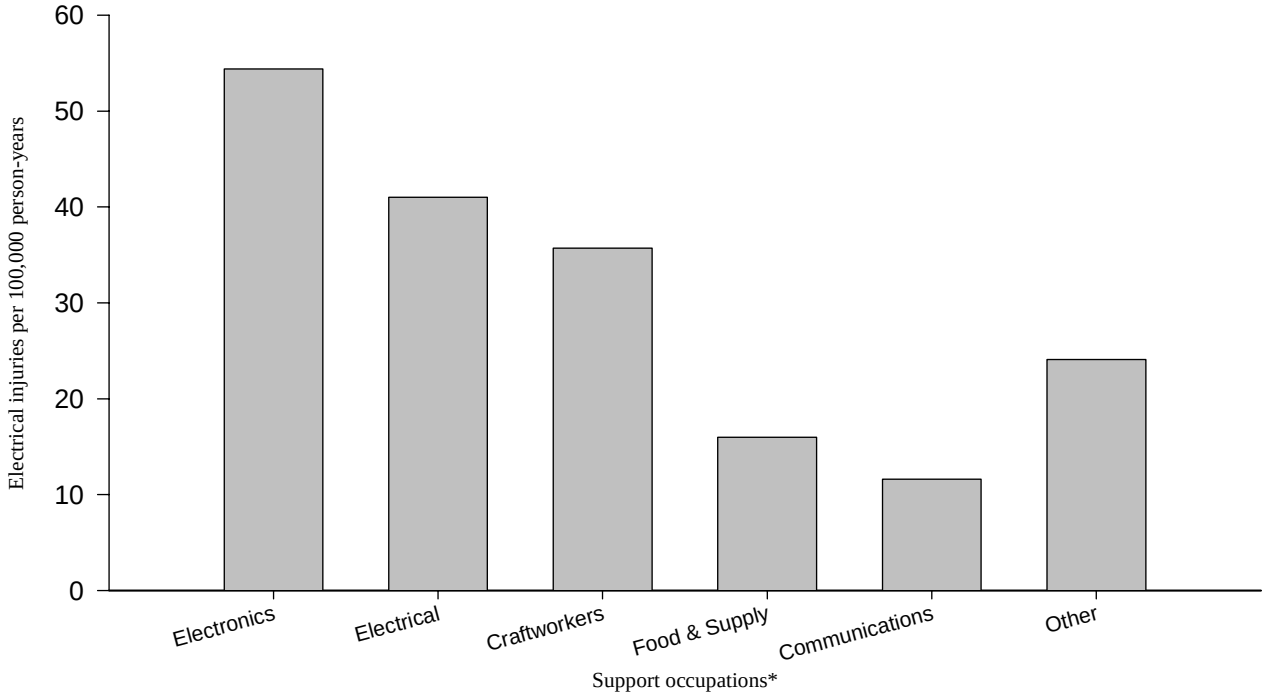
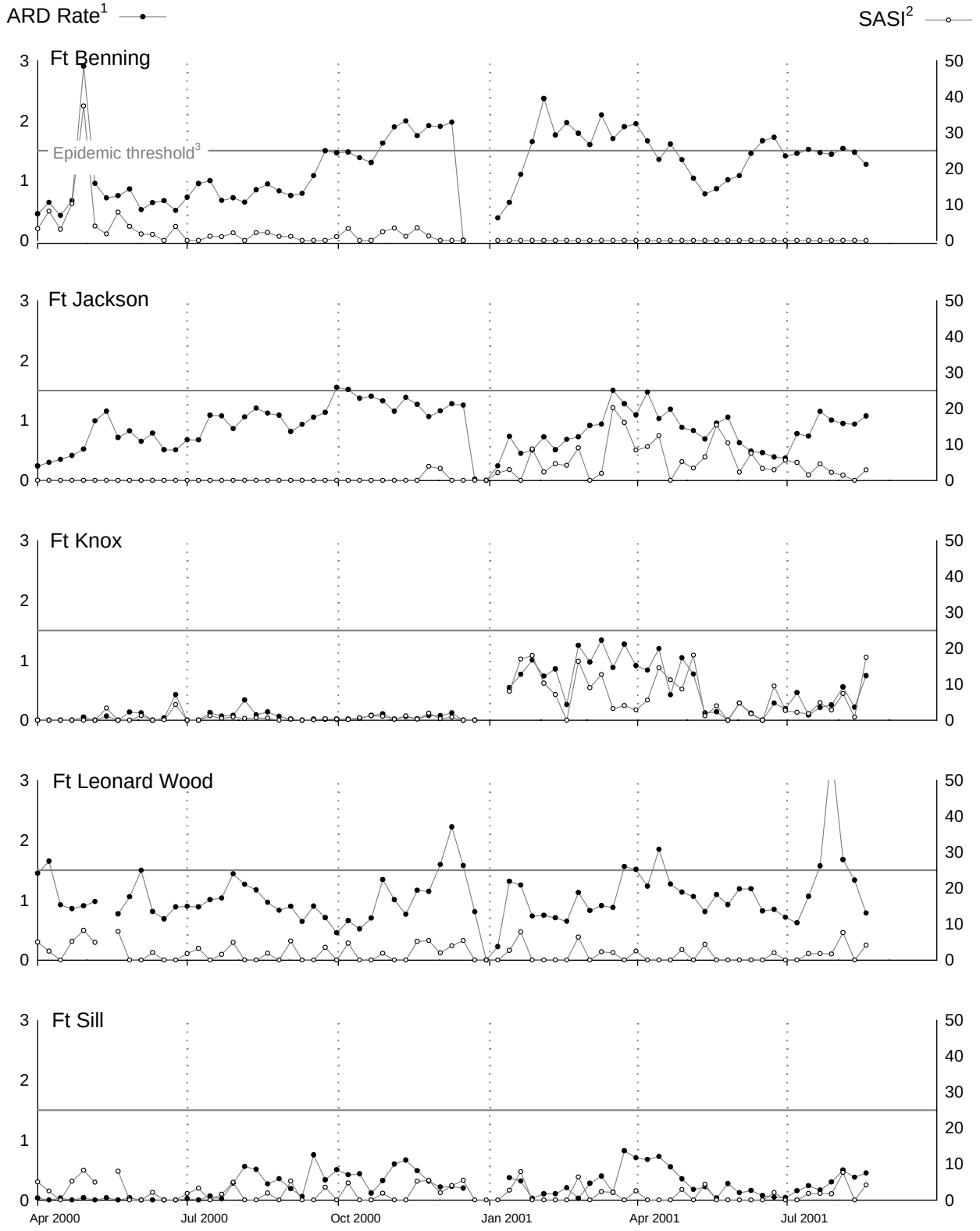
**Figure 3. Rates of electrical injuries, by military support occupations, active duty members, US Armed Forces, 1998-2000.**




*DoD Primary Occupation code:
Electrical Repairers (600-604, 610-612, 621, 623, 641, 643, 645-646, 651-652, 661-662, 670, 690)
Electronics Repairers (100-104, 113, 121, 123, 130, 150, 193, 198, 403-404, 407-408)
Craftworkers (701-702, 710, 712-713, 720-721, 750, 760, 790)
Food & Supply (800, 811, 821-823, 830, 840)
Communications (201-203, 210, 221, 230-233, 242-243, 250, 260)

## Acute respiratory disease (ARD) and streptococcal pharyngitis (SASI), Army Basic Training Centers by week through August 2001




[1]ARD rate = cases per 100 trainees per week

[2]SASI (Strep ARD surveillance index) = (ARD rate)x(rate of Group A beta-hemolytic strep)

[3]ARD rate >=1.5 or SASI >=25.0 for 2 consecutive weeks indicates an "epidemic"

## Sentinel reportable events for all beneficiaries[1] at US Army medical facilities, cumulative numbers[2] for calendar years through July 31, 2000 and July 31, 2001

| Reporting location | Number of reports all events[3] | | Food-borne | | | | | | | | Vaccine Preventable | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Campylobacter | | Giardia | | Salmonella | | Shigella | | Hepatitis A | | Hepatitis B | | Varicella | |
| | 2000 | 2001 | 2000 | 2001 | 2000 | 2001 | 2000 | 2001 | 2000 | 2001 | 2000 | 2001 | 2000 | 2001 | 2000 | 2001 |
| **NORTH ATLANTIC** | | | | | | | | | | | | | | | | |
| Washington, DC Area | 107 | 109 | 1 | 1 | 5 | 6 | 6 | 5 | 2 | 2 | 1 | - | 1 | - | 2 | 1 |
| Aberdeen, MD | 17 | 31 | - | - | - | - | - | - | - | - | - | - | - | 1 | 1 | - |
| FT Belvoir, VA | 125 | 112 | 9 | 8 | 1 | 5 | 5 | 7 | 2 | - | - | 1 | 3 | - | 1 | - |
| FT Bragg, NC | 834 | 935 | - | 5 | - | - | 11 | 15 | 1 | 1 | - | - | - | - | 3 | 2 |
| FT Drum, NY | 131 | 132 | - | 2 | - | - | - | - | - | - | - | - | - | - | 6 | - |
| FT Eustis, VA | 138 | 154 | 4 | - | - | - | 2 | 1 | - | - | - | - | 1 | - | 1 | 1 |
| FT Knox, KY | 131 | 165 | - | - | - | 3 | 1 | 1 | - | - | - | - | 1 | - | 5 | 1 |
| FT Lee, VA | 157 | 149 | - | - | - | - | - | - | - | - | 1 | - | - | - | - | - |
| FT Meade, MD | 47 | 45 | - | - | - | - | 2 | 1 | - | - | - | - | - | - | - | - |
| West Point, NY | 20 | 40 | - | 1 | - | - | - | 1 | - | - | - | 2 | - | - | - | - |
| **GREAT PLAINS** | | | | | | | | | | | | | | | | |
| FT Sam Houston, TX | 186 | 215 | - | - | - | 2 | 6 | 2 | 2 | - | 2 | - | - | - | 1 | - |
| FT Bliss, TX | 194 | 154 | 1 | 3 | 3 | 3 | 3 | 1 | 5 | 5 | - | - | - | 2 | 2 | 1 |
| FT Carson, CO | 373 | 444 | - | 2 | - | 2 | 1 | 1 | 1 | 1 | - | - | - | 2 | - | - |
| FT Hood, TX | 1083 | 1057 | 1 | 1 | - | - | - | 2 | 2 | 5 | - | - | 1 | 7 | 2 | 2 |
| FT Huachuca, AZ | 23 | 22 | - | 1 | - | - | - | - | - | - | - | - | - | - | - | 1 |
| FT Leavenworth, KS | 12 | 24 | - | 1 | 1 | - | 1 | 2 | - | - | - | - | - | - | - | - |
| FT Leonard Wood, MO | 100 | 136 | 1 | - | - | - | - | - | - | - | - | - | - | - | 13 | 5 |
| FT Polk, LA | 176 | 168 | - | - | - | - | - | 1 | - | - | - | - | - | - | - | - |
| FT Riley, KS | 157 | 159 | - | - | - | 1 | - | - | - | - | - | - | - | 1 | - | - |
| FT Sill, OK | 175 | 209 | - | - | - | - | - | - | - | - | - | - | - | 1 | 3 | 1 |
| **SOUTHEAST** | | | | | | | | | | | | | | | | |
| FT Gordon, GA | 151 | 154 | - | - | - | - | 1 | - | - | - | - | 2 | 2 | 2 | 2 | - |
| FT Benning, GA | 196 | 302 | - | 1 | 1 | 2 | 6 | 4 | - | 1 | - | - | 1 | - | 6 | 3 |
| FT Campbell, KY | 294 | 503 | 1 | 3 | 2 | 3 | 10 | 6 | 11 | - | - | 1 | 1 | - | 2 | - |
| FT Jackson, SC | 265 | 143 | - | - | - | - | - | - | - | - | - | 1 | - | 5 | 3 | 2 |
| FT Rucker, AL | 51 | 55 | - | - | - | - | 1 | 3 | - | - | - | - | - | - | - | - |
| FT Stewart, GA | 327 | 308 | - | - | - | - | 4 | 7 | - | - | - | - | - | 3 | - | - |
| **WESTERN** | | | | | | | | | | | | | | | | |
| FT Lewis, WA | 420 | 425 | 3 | 3 | 1 | 1 | 2 | 7 | 1 | - | - | - | 1 | 2 | - | - |
| FT Irwin, CA | 34 | 35 | - | - | - | - | - | - | - | - | - | 2 | - | 3 | 1 | 2 |
| FT Wainwright, AK | 50 | 51 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **OTHER LOCATIONS** | | | | | | | | | | | | | | | | |
| Hawaii | 471 | 530 | 25 | 31 | 6 | 13 | 5 | 17 | - | 6 | 1 | 1 | 2 | 1 | 1 | - |
| Europe | 921 | 880 | 10 | 25 | 1 | 2 | 17 | 34 | - | - | - | 2 | 6 | 7 | 9 | 6 |
| Korea | 257 | 36 | - | - | - | - | 1 | 2 | - | - | - | 1 | 1 | - | 1 | 2 |
| **Total** | **7623** | **7882** | **56** | **88** | **21** | **43** | **85** | **120** | **27** | **21** | **5** | **13** | **21** | **37** | **65** | **30** |

1. Includes active duty servicemembers, dependents, and retirees.

2. Events reported by August 7, 2000 and 2001.

3. Seventy events specified by Tri-Service Reportable Events, Version 1.0, July 2000.

Note: Completeness and timeliness of reporting vary by facility.

Source: Army Reportable Medical Events System.

## (Cont'd) Sentinel reportable events for all beneficiaries[1] at US Army medical facilities cumulative numbers [2] for calendar years through July 31, 2000 and July 31, 2001

| Reporting location | Arthropod-borne | | | | Sexually Transmitted | | | | | | | | Environmental | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lyme Disease | | Malaria | | Chlamydia | | Gonorrhea | | Syphilis[3] | | Urethritis[4] | | Cold | | Heat | |
| | 2000 | 2001 | 2000 | 2001 | 2000 | 2001 | 2000 | 2001 | 2000 | 2001 | 2000 | 2001 | 2000 | 2001 | 2000 | 2001 |
| **NORTH ATLANTIC** | | | | | | | | | | | | | | | | |
| Washington, DC Area | 2 | 2 | - | - | 36 | 45 | 14 | 11 | 1 | 5 | - | - | - | - | - | - |
| Aberdeen, MD | 3 | - | - | - | 7 | 18 | - | 8 | 2 | - | - | - | - | 3 | - | - |
| FT Belvoir, VA | - | - | 1 | - | 79 | 70 | 11 | 12 | 2 | 1 | - | - | - | - | 4 | 3 |
| FT Bragg, NC | 1 | - | 3 | 4 | 315 | 416 | 168 | 208 | 1 | - | 240 | 169 | - | 7 | 91 | 103 |
| FT Drum, NY | - | - | - | - | 81 | 102 | 31 | 24 | - | 1 | 2 | - | 9 | 2 | 1 | - |
| FT Eustis, VA | 1 | - | - | - | 99 | 111 | 19 | 38 | - | - | - | - | - | - | 7 | 1 |
| FT Knox, KY | - | - | - | - | 88 | 125 | 25 | 30 | 1 | 2 | - | - | - | - | 9 | 1 |
| FT Lee, VA | - | - | - | - | 123 | 111 | 33 | 38 | - | - | - | - | - | - | - | - |
| FT Meade, MD | - | - | - | - | 32 | 35 | 7 | 8 | - | 1 | 1 | - | - | - | - | - |
| West Point, NY | 1 | 26 | - | - | 15 | 8 | 3 | 1 | - | - | - | - | 1 | - | - | 1 |
| **GREAT PLAINS** | | | | | | | | | | | | | | | | |
| FT Sam Houston, TX | - | - | - | 1 | 139 | 172 | 21 | 24 | - | - | 4 | 1 | - | 1 | 6 | 8 |
| FT Bliss, TX | - | 1 | 3 | 2 | 102 | 79 | 33 | 37 | 2 | 1 | - | - | - | - | 4 | 3 |
| FT Carson, CO | - | - | 1 | - | 304 | 337 | 42 | 44 | - | - | 23 | 50 | - | - | - | - |
| FT Hood, TX | - | - | - | - | 590 | 575 | 216 | 214 | - | 3 | 232 | 207 | 1 | - | 17 | 27 |
| FT Huachuca, AZ | - | - | - | - | 16 | 17 | 6 | 2 | - | - | - | - | - | - | 1 | - |
| FT Leavenworth, KS | - | - | - | - | 7 | 14 | 1 | 4 | - | - | - | - | - | - | - | - |
| FT Leonard Wood, MO | - | - | - | - | 47 | 83 | 25 | 24 | - | - | 6 | 5 | 3 | 3 | 5 | 11 |
| FT Polk, LA | - | - | - | 1 | 160 | 128 | 16 | 34 | - | - | - | - | - | - | - | - |
| FT Riley, KS | - | - | - | 1 | 88 | 108 | 42 | 17 | 1 | - | - | - | 22 | 3 | 1 | 26 |
| FT Sill, OK | 1 | 1 | - | - | 104 | 112 | 28 | 44 | - | - | 27 | 39 | - | - | 6 | 7 |
| **SOUTHEAST** | | | | | | | | | | | | | | | | |
| FT Gordon, GA | 2 | - | 3 | 1 | 129 | 129 | 10 | 13 | - | - | - | - | - | - | - | 2 |
| FT Benning, GA | - | - | 3 | - | 83 | 182 | 52 | 59 | 3 | - | - | 1 | - | - | 38 | 15 |
| FT Campbell, KY | - | 2 | 5 | - | 150 | 398 | 102 | 86 | 1 | 1 | - | - | 2 | - | 1 | 2 |
| FT Jackson, SC | - | - | - | - | 234 | 87 | 27 | 37 | - | 2 | - | - | - | - | - | 5 |
| FT Rucker, AL | - | - | 1 | - | 37 | 37 | 11 | 10 | - | - | - | - | - | - | 1 | 2 |
| FT Stewart, GA | - | - | - | - | 110 | 100 | 70 | 78 | - | - | 116 | 110 | - | - | 26 | 9 |
| **WESTERN** | | | | | | | | | | | | | | | | |
| FT Lewis, WA | - | - | 2 | - | 264 | 262 | 42 | 58 | - | - | 88 | 82 | - | 4 | - | - |
| FT Irwin, CA | - | - | - | - | 28 | 22 | 5 | 2 | - | - | - | - | - | - | - | 2 |
| FT Wainwright, AK | - | - | - | - | 45 | 40 | 1 | - | - | - | - | - | 4 | 11 | - | - |
| **OTHER LOCATIONS** | | | | | | | | | | | | | | | | |
| Hawaii | - | - | 4 | - | 320 | 355 | 54 | 45 | - | - | 1 | 1 | - | - | 3 | - |
| Europe | 4 | 2 | - | 2 | 698 | 653 | 160 | 119 | 1 | 2 | - | 1 | 5 | 10 | - | - |
| Korea | - | - | 1 | 4 | 212 | 5 | 15 | 14 | 10 | 1 | 6 | 1 | 2 | - | - | 4 |
| **Total** | **15** | **34** | **27** | **16** | **4742** | **4936** | **1290** | **1343** | **25** | **20** | **746** | **667** | **49** | **44** | **221** | **232** |

3. Primary and secondary.

4. Urethritis, non-gonoccal (NGU).

Note: Completeness and timeliness of reporting vary by facility.

Source: Army Reportable Medical Events System.

DEPARTMENT OF THE ARMY
U.S. Army Center for Health Promotion
and Preventive Medicine
Aberdeen Proving Ground, MD 21010-5422

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*Inquiries regarding content or material to be considered for publication should be directed to: Editor, Army Medical Surveillance Activity, Building T-20, Room 213 (Attn: MCHB-TS-EDM), 6900 Georgia Avenue, NW, Washington, D.C. 20307-5001. E-mail: editor@amsa.army.mil*

*To be added to the mailing list, contact the Army Medical Surveillance Activity @ (202) 782-0471, DSN 662-0471. E-mail: msmr@amsa.army.mil*